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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HEWLETT-PACKARD COMPANY  
Intellectual Property Administration  
P.O. Box 272400  
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EXAMINER

YIGDALL, MICHAEL J

ART UNIT	PAPER NUMBER
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2122

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/841,981

Applicant(s)

SUMNER ET AL.

Examiner

Michael J. Yigdall

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Applicant's amendment and response filed on September 3, 2004 has been fully considered. Claims 1-28 remain pending.

#### ***Response to Arguments***

2. Applicant's arguments have been fully considered but they are not persuasive.
3. Applicant contends that Plum neither discloses nor suggests the limitations recited in independent claims 1, 12 and 21 (Applicant's remarks, pages 15-17). Similarly, Applicant contends that O'Brien, Buzbee, Kuzara and Larus do not cure the alleged deficiency of Plum, either alone or in combination (Applicant's remarks, pages 19-20).

However, the examiner disagrees with Applicant's characterization of the references. Applicant refers to column 7, lines 45 et seq. of the Plum reference, which refers to FIG. 5, and acknowledges that Plum discloses:

Once a chunk is located, the block 210 determines whether the chunk type is a "block" chunk or a "branch" chunk. Branch chunks ... result in "test" type instrument code being inserted into the beginning of each branch path they define (decision block 214, block 216). A "block" type chunk ... result[s] in "block" instrument code being inserted (block 218).

The above disclosure shows one or more code modification portions operable to insert corresponding instrumentation code at a location associated with a particular syntax structure. Plum expressly illustrates that the parser selectively inserts `_PHI_TEST` or `_PHI_BLOCK` instrumentation code corresponding to the type of chunk or syntax structure recognized by the parser (FIG. 5, blocks 214, 216 and 218). The limitations recited in the independent claims, as amended, do not exclude these teachings of Plum. See the claim rejections below.

4. It is noted that Applicant has not identified the portion(s) of the specification providing support for the amendments to the claims. Importantly, it is further noted that features upon which Applicant relies, specifically “a corresponding, and possibly variable, instrumentation code portion” (Applicant’s remarks, page 16, lines 16-17) and “specifying, in a dynamic manner, a variety of corresponding instrumentation code portions” (Applicant’s remarks, page 20, lines 1-2), are not recited in the rejected claims. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 2, 12, 13, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,758,061 to Plum (art of record, “Plum” herein).

With respect to claim 1 (currently amended), Plum discloses a method of modifying a source code portion associated with a computer program (see, for example, column 5, line 39-44, which shows instrumenting the source code of a computer program), comprising the steps of:

(a) scanning said source code portion using a parser to recognize at least one select syntax structure therein (see, for example, column 7, lines 1-9, which shows a parser for parsing

Art Unit: 2122

the source code and analyzing its syntax, and column 9, lines 33-40, which further shows identifying structures in the code), said parser having one or more predetermined code modification portions therein, each being operable to specify a corresponding instrumentation code portion (see, for example, column 7, lines 45-65, which further shows predetermined code modification portions associated with different “chunks” or syntax structures, operable to specify corresponding “test” or “block” instrumentation code); and

(b) inserting an instrumentation code portion into said source code portion at a location associated with a particular one of said at least one select syntax structure (see, for example, column 7, lines 15-21 and 26-36, which shows inserting instrumentation code at locations associated with particular structures), said instrumentation code portion being specified responsive to a corresponding predetermined code modification portion provided in said parser (see, for example, column 7, lines 45-65, which further shows that the instrumentation code is inserted by its corresponding code modification portion).

With respect to claim 2 (currently amended), Plum further discloses the limitation wherein said parser comprises a recursive-descent parser (see, for example, column 9, lines 50-66, which shows using a recursive-descent parser), and further wherein said computer program is a program selected from the group consisting of an operating system kernel, an application program and a software utility program (see, for example, column 5, lines 25-32, which shows operating on the source code of a computer program).

With respect to claim 12 (currently amended), the recited system is analogous to the method recited in claim 1 (see Plum as applied to claim 1 above). Note that Plum further discloses such a system (see, for example, column 5, lines 12-24).

With respect to claim 13 (currently amended), the recited limitations are analogous to the limitations recited in claim 2 (see Plum as applied to claim 2 above).

With respect to claim 21 (currently amended), the recited computer-readable medium is analogous to the method recited in claim 1 (see Plum as applied to claim 1 above). Note that Plum further discloses such a computer-readable medium (see, for example, column 5, lines 12-24).

With respect to claim 22 (currently amended), the recited limitations are analogous to the limitations recited in claim 2 (see Plum as applied to claim 2 above).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3, 4, 7, 9, 10, 14, 16, 18, 19, 23, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claims 2, 13 and 22 above, respectively, in view of U.S. Pat. No. 6,311,327 to O'Brien et al. (art of record, "O'Brien" herein).

With respect to claim 3 (currently amended), although Plum discloses additional processing performed prior to instrumenting the source code (see, for example, column 10, lines 42-46), Plum does not expressly disclose pre-processing said source code portion.

However, O'Brien discloses a method for parsing and instrumenting source code (see, for example, column 3, line 48 to column 4, line 4) that comprises a pre-processor for removing information from the source code (see, for example, column 11, line 59 to column 12, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the pre-processing step taught by O'Brien to the method of Plum, for the purpose of removing information from the source code prior to instrumentation.

With respect to claim 4 (original), Plum in view of O'Brien further discloses the limitation wherein said pre-processing is operable to remove macro code portions from said source code portion (see, for example, Plum, column 10, lines 34-46, which shows that the additional processing performed prior to instrumenting the source code relates to inline functions that are to be expanded, i.e. macros; also see, for example, O'Brien, column 11, line 59 to column 12, line 5, which shows that the information removed in the pre-processing step includes comments, which may comprise macro definitions).

With respect to claim 7 (original), although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see, for example, column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to count accesses to a particular function subroutine of said computer program.

However, O'Brien discloses a method for parsing and instrumenting source code (see, for example, column 3, line 48 to column 4, line 4) that is operable to count accesses to particular functions, for the purpose of analyzing performance (see, for example, column 20, lines 23-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to count accesses to particular functions, as taught by O'Brien, for the purpose of enabling performance analysis.

With respect to claim 9 (original), although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see, for example, column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to monitor frequency of function calls from a plurality of select locations in said computer program.

However, O'Brien discloses a method for parsing and instrumenting source code (see, for example, column 3, line 48 to column 4, line 4) that is operable to monitor the number of function calls and the average execution time of each function from a plurality of locations in the program, for the purpose of analyzing performance (see, for example, column 20, lines 23-39). The frequency of function calls may be determined based on the number of calls and the execution time.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to monitor the frequency of function calls, as taught by O'Brien, for the purpose of enabling performance analysis.



With respect to claim 10 (original), although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see, for example, column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to monitor frequency of use of a plurality of code paths in said computer program.

However, O'Brien discloses a method for parsing and instrumenting source code (see, for example, column 3, line 48 to column 4, line 4) that is operable to monitor branches, entry points and exit points, i.e. code paths, with associated time stamps (see, for example, column 21, lines 26-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to monitor the frequency of use of code paths, as taught by O'Brien, for the purpose of enabling performance analysis.

With respect to claim 14 (original), the recited limitations are analogous to the limitations recited in claims 3 and 4 (see Plum in view of O'Brien as applied to claims 3 and 4 above).

With respect to claim 16 (original), the recited limitations are analogous to the limitations recited in claim 7 (see Plum in view of O'Brien as applied to claim 7 above).

With respect to claim 18 (original), the recited limitations are analogous to the limitations recited in claim 9 (see Plum in view of O'Brien as applied to claim 9 above).

With respect to claim 19 (original), the recited limitations are analogous to the limitations recited in claim 10 (see Plum in view of O'Brien as applied to claim 10 above).

With respect to claim 23 (original), the recited limitations are analogous to the limitations recited in claim 10 (see Plum in view of O'Brien as applied to claim 10 above).

With respect to claim 26 (original), the recited limitations are analogous to the limitations recited in claim 7 (see Plum in view of O'Brien as applied to claim 7 above).

With respect to claim 28 (original), the recited limitations are analogous to the limitations recited in claim 9 (see Plum in view of O'Brien as applied to claim 9 above).

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claim 2 above, in view of U.S. Pat. No. 5,909,578 to Buzbee (art of record, "Buzbee" herein).

With respect to claim 5 (original), although Plum discloses operating on the source code of a computer program (see, for example, column 5, lines 25-38), which may comprise an operating system kernel, Plum does not expressly disclose the limitation wherein said operating system kernel comprises HP-UX Operating System kernel.

However, Buzbee discloses a method for instrumenting source code to obtain profiling information (see, for example, column 5, lines 1-14), wherein the operating system kernel is the HP-UX OS (see, for example, column 3, lines 30-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the method of Plum with support for the HP-UX Operating System kernel, as taught by Buzbee, in order to increase its flexibility and compatibility.

10. Claims 6, 8, 15, 17, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claims 2, 13 and 22 above, respectively, in view of U.S. Pat. No. 5,450,586 to Kuzara et al. (art of record, "Kuzara" herein).

With respect to claim 6 (original), although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see, for example, column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to count accesses to a particular global variable of said computer program.

However, Kuzara discloses a method for instrumenting source code with code markers in order to analyze and debug the software (see, for example, the title and abstract), wherein the code markers may be used to count events such as variable accesses (see, for example, column 9, lines 11-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to count accesses to variables and global variables, as taught by Kuzara, in order to facilitate debugging.

With respect to claim 8 (original), although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see, for example, column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to count accesses to a particular global variable from a select module of said computer program.

However, Kuzara discloses a method for instrumenting source code with code markers in order to analyze and debug the software (see, for example, the title and abstract), wherein the code markers may be used to determine when execution is in a particular module and to count events such as variable accesses (see, for example, column 9, lines 11-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to count accesses to variables and global variables from particular modules, as taught by Kuzara, in order to facilitate debugging.

With respect to claim 15 (original), the recited limitations are analogous to the limitations recited in claim 6 (see Plum in view of Kuzara as applied to claim 6 above).

With respect to claim 17 (original), the recited limitations are analogous to the limitations recited in claim 8 (see Plum in view of Kuzara as applied to claim 8 above).

With respect to claim 25 (original), the recited limitations are analogous to the limitations recited in claim 6 (see Plum in view of Kuzara as applied to claim 6 above).

With respect to claim 27 (original), the recited limitations are analogous to the limitations recited in claim 8 (see Plum in view of Kuzara as applied to claim 8 above).

11. Claims 11, 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claims 2, 13 and 22 above, respectively, in view of U.S. Pat. No. 6,327,699 to Larus et al. (art of record, "Larus" herein).

With respect to claim 11 (original), although Plum discloses an exemplary computer system having a processor, Plum does not expressly disclose the limitation wherein said operating system kernel is operable with a multiprocessor computer system.

However, Larus discloses a method for instrumenting source code to produce a trace of executed paths (see, for example, column 2, lines 10-17) that is operable with a multiprocessor computer system (see, for example, column 3, lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the method of Plum with support for a multiprocessor computer system, as taught by Larus, in order to increase its flexibility and compatibility.

With respect to claim 20 (original), the recited limitations are analogous to the limitations recited in claim 11 (see Plum in view of Larus as applied to claim 11 above).

With respect to claim 24 (original), the recited limitations are analogous to the limitations recited in claim 11 (see Plum in view of Larus as applied to claim 11 above).

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

Art Unit: 2122

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (571) 272-3707. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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